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EXAMINER	
MEW, KEVIN D	

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2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/915,811	LOHMAN ET AL.	
	Examiner	Art Unit	
	Kevin Mew	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-47,50 and 51* is/are rejected.

7)☒ Claim(s) *48 and 49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Response to Amendment

1. Applicant's Remarks/Arguments filed on 11/23/2005 regarding claims 1, 19, 34 have been considered. Claims 1-51 are currently pending.

2. Acknowledgement is made of the amended abstract with respect to the objection to the abstract set forth in the previous Office Action. The correction is acceptable and the objection to the specification has been withdrawn.

3. Acknowledgement is made of the amended claims 34, 49, 50 with respect to the claim objections set forth in the previous Office Action. The corrections are acceptable and the claim objections have been withdrawn.

Claim Objections

4. Claims 1, 34 are objected to because of the following informalities:

In line 3, claim 1, the term "adapted to communicate" contains language that suggests or makes optional and does not limit the scope of the claim limitation. This term is suggested to be replaced with the term "communicates."

In line 6, claim 34, the term "adapted to convert" contains language that suggests or makes optional and does not limit the scope of the claim limitation. This term is suggested to be replaced with the term "converts."

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 1, 5, 7-8, 10-11, 13, 15, 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Lemieux (USP 6,452,942).

Regarding claim 1, Lemieux discloses a communications system (Fig. 2) comprising:

a hub (**ATM switch**, element 212, Fig. 2) for interfacing with a network (**for interfacing with an ATM network**, see element 202, Fig. 2); and

an integrated Wireless Digital Subscriber Line Access Multiplexer (WDSLAM) (**WL-DSLAM**, see element 222, Fig. 2) communicates data between said wireless hub (**communicates with ATM switch,** element 212, Fig. 2) and said WDSLAM (**WL-DSLAM**, element 222, Fig. 2) via a wireless link (**via a wireless link**, element 220, Fig. 2), wherein said hub (**ATM switch**, element 212, Fig. 2) has a direct access to queue utilization levels within said WDSLAM (**ATM switch has direct access to the aggregate throughput utilization provided by the WL-DSLAM via the wireless link**, col. 4, lines 9-21, col. 5, lines 10-15 and Fig. 2).

Regarding claim 5, Lemieux also discloses said queue utilization levels further comprises Asynchronous Transfer Mode (ATM) queue utilization levels (**aggregate throughput provided to the ATM aggregate side**, col. 4, lines 9-21 and Fig. 2).

Regarding claim 7, Lemieux further discloses the communication system of claim 1, wherein said wireless hub and WDSLAM have a single feature set (**a feature set of aggregate throughput**, see col. 4, lines 9-21).

Regarding claim 8, Lemieux further discloses the communication system of claim 7, wherein said single feature set comprises an ATM feature set (**ATM traffic**, see col. 4, lines 9-21).

Regarding claim 10, Lemieux further discloses the communication system of claim 1, wherein said wireless hub has access to the queue utilization levels on a per line Digital Subscriber Line (DSL) basis (**ATM switch has access to each communication rate of each DSL line and a bandwidth is allocated in response to each rate**, see col. 2, lines 21-45).

Regarding claim 11, Lemieux further discloses the communication system of claim 1, wherein each queue is assigned a Quality of Service (QOS) class having a priority level (**QoS per subscription**, see Abstract).

Regarding claim 13, Lemieux further discloses said network includes an Asynchronous Transfer Mode (ATM) network (**ATM network**, col. 3, lines 46-65 and Fig. 2).

Regarding claim 15, Lemieux discloses the communication system of claim 1, wherein said interface is made via a digital carrier (**SDH**, col. 3, lines 46-65).

Regarding claim 17, Lemieux discloses the communication system of claim 1, wherein said interface is made via an optical carrier (**SONET**, col. 3, lines 46-65 and Fig. 2).

Regarding claim 18, Lemieux discloses the communication system of claim 17, wherein said optical carrier comprises at least one of:

an Optical Carrier Level 1 (OC-1);

an Optical Carrier Level 3 (OC-3);

an Optical Carrier Level 12 (**OC- 12**, col. 3, lines 46-65 and Fig. 2);

an Optical Carrier Level 48 (OC-48);

an Optical Carrier Level 96 (OC-96); and

an Optical Carrier Level 192 (OC-192).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemieux in view of Scott (US Publication 2005/0135247).

Regarding claim 2, Lemieux discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to disclose the communication system of claim l, wherein said wireless data further comprises a Code Division Multiple Access (CDMA) signal.

However, Scott discloses that wireless data are implemented as CDMA signals (see paragraph 0123). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the wireless link connection between the WL-DSLAM and the ATM switch in Lemieux with the teaching of Scott in implementing the wireless data as CDMA signals. The motivation to do so is allow wireless data to be communicated between the ATM switch and the DSLAM in accordance with the CDMA communications standard.

Regarding claim 3, Lemieux discloses the communication system of claim l, except fails to disclose wherein said wireless data further comprises a Time Division Multiple Access (TDMA) signal.

However, Scott discloses that wireless data are implemented as TDMA signals (see paragraph 0123). Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify the wireless link connection between the WL-DSLAM and the ATM switch in Lemieux with the teaching of Scott in implementing the wireless data as TDMA signals. The motivation to do so is allow wireless data to be communicated between the ATM switch and the DSLAM in accordance with the TDMA communications standard.

7. Claims 1, 4-24, 27-33, 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voit et al. (USP 6,829,250) in view of Suzuki (USP 6,529,479), and in further view of Alspaugh et al. (US Publication 2004/0213189).

Regarding claim 1, Voit discloses a communications system (see Fig. 15) comprising:

a hub (**ADN ATM switch**, see element 123, Fig. 15) for interfacing with a network (**for interfacing with an ATM frame relay network**, see element 129, Fig. 15); and

an integrated Digital Subscriber Line Access Multiplexer (DSLAM) (**DSLAM**, see element 111, Fig. 15) communicates data between said hub (**DSLAM communicates data between ADN ATM switch and DSLAM,** see col. 4, lines 28-43) and said DSLAM via a DS3 link (**via a DS3 link**, see element 119, Fig. 15), wherein said hub has a direct access to queue utilization levels within said DSLAM (**DSLAM is programmed to regulate traffic to the upstream and downstream rates corresponding to the grade of service associated with each customer**, see col. 5, lines 1-9).

Voit does not explicitly show said hub has a direct access to queue utilization levels within said DSLAM.

However, Suzuki discloses Switched Virtual Connection/Channel SVC Controller 807 of the DSLAM 102 (see Fig. 9) looks up for the unoccupied or idle ATM virtual

connection/channel VC in the VC map and communicates the status of this idle ATM VC in an OEM cell which is to be transmitted to the Con. Manager 902 (Fig. 10) of the Access Server 117 (Figs. 2 and 10) via the ATM switch (see col. 10, lines 48-64, col. 15, lines 60-67, col. 16, lines 1-35 and element 103, Figs. 9 and 10). This shows the hub, a combination of the ATM switch and the Access Server, has direct access to the queue utilization levels (VC utilization level) of the DSLAM.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the communication system of Voit with the teaching of Suzuki such that the ATM switch of Voit has direct access to the VC utilization level of the DSLAM such as the one taught by Suzuki. The motivation to do so is to allow an unused virtual connection to be allocated to the subscriber when a call originating request is issued from the subscriber.

Voit does not explicitly disclose the said hub is a wireless hub nor the said DS3 link is a wireless link.

However, Alspaugh discloses that the link between ATM switch and R-DSLAM is implemented as a wireless link (see Fig. 4 and paragraph 0060). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the ADN ATM switch in Voit such that the link between DSLAM and ADN ATM switch is implemented as a wireless link such as the wireless link between ATM switch and DSLAM taught by Alspaugh. The motivation to do so is to

provide a 44.736 Mbps of high rate transmission of ATM cells over the convenience of a wireless transmission medium.

Regarding claim 4, the combined system of Voit and Alspaugh discloses the communication system of claim 1, Alspaugh further discloses said wireless data further comprises a cellular signal (see Fig. 4).

Regarding claim 5, Lemieux also discloses said queue utilization levels further comprises Asynchronous Transfer Mode (ATM) queue utilization levels (aggregate throughput of the ATM, col. 4, lines 9-21 and Fig. 2).

Regarding claim 6, Voit further discloses the communication system of claim 1, wherein said queue utilization levels further comprises Internet Protocol (IP) queue utilization levels (**different IP data services require different rates**, see col. 10, lines 1-32).

Regarding claim 7, Voit further discloses the communication system of claim 1, wherein said wireless hub and WDSLAM have a single feature set (**a feature set of queuing operations**, see col. 9, lines 55-67).

Regarding claim 8, Voit further discloses the communication system of claim 7, wherein said single feature set comprises an ATM feature set (**ATM cell traffic**, see col. 9, lines 55-67).

Regarding claim 9, Voit further discloses the communication system of claim 7, wherein said single feature set comprises an Internet Protocol (IP) feature set (**IP traffic**, see col. 10, lines 13-32).

Regarding claim 10, Voit further discloses the communication system of claim 1, wherein said wireless hub has access to the queue utilization levels on a per line Digital Subscriber Line (DSL) basis (**ADN ATM switch has access to each communication rate of each DSL line and a bandwidth is allocated in response to each rate**, see col. 18, lines 9-44).

Regarding claim 11, Voit further discloses the communication system of claim 1, wherein each queue is assigned a Quality of Service (QOS) class having a priority level (see col. 9, lines 55-67 and col. 10, lines 1-12).

Regarding claim 12, Voit further discloses the communication system of claim 1, wherein said wireless hub allocates bandwidth between said wireless hub and at least one WDSLAM based on at least one of:

a quality of service (QOS) class for pre-assigning a priority and quality level to data (**a first level of QoS is provided based on priority and the type of service required**, see col. 19, lines 10-67);

a Service Level Agreement (SLA) for determining bandwidth guarantees between a user and a service provider (**service level agreement SLA corresponds to a different rate/bandwidth between a subscriber and a service provider**, see col. 18, lines 29-44); and

the queue utilization levels for determining queues that are at capacity (**communication rates determines different logic pipes for data transmission**, see col. 18, lines 9-44).

Regarding claim 13, the combined system of Voit and Alspaugh discloses the communication system of claim 1. Voit further discloses said network includes an Asynchronous Transfer Mode (ATM) network (**ATM cell relay network**, see element 129, Fig. 14).

Regarding claim 14, the combined system of Voit and Alspaugh discloses the communication system of claim 1, wherein said network includes an Internet Protocol (IP) network (**ISP network**, see element 132, Fig. 15).

Regarding claim 15, Voit discloses the communication system of claim 1, wherein said interface is made via a digital carrier (**DS3**, see Fig. 15).

Regarding claim 16, Voit discloses the communication system of claim 15, wherein said digital carrier comprises at least one of:

a Digital Signal Level 1 (DS1);

a Digital Signal Level 2 (DS2); and

a Digital Signal Level 3 (**DS3**, see Fig. 15).

Regarding claim 17, Voit discloses the communication system of claim 1, wherein said interface is made via an optical carrier (**SONET**, see Fig. 15).

Regarding claim 18, Voit discloses the communication system of claim 17, wherein said optical carrier comprises at least one of:

an Optical Carrier Level 1 (OC-1);

an Optical Carrier Level 3 (**OC-3**, see Fig. 15);

an Optical Carrier Level 12 (OC- 12);

an Optical Carrier Level 48 (OC-48);

an Optical Carrier Level 96 (OC-96); and

an Optical Carrier Level 192 (OC-192).

Regarding claim 19, Voit discloses a method for communicating in a communication system comprising:

receiving said signal, at a hub (**receiving rate-shaping at ADN-ATM switch**, see col. 16, lines 1-19);

selectively allocating bandwidth to said integrated WDSLAM in response to the queue utilization level of said WDSLAM (**allocating different bandwidths in response different rates required for each service**, see col. 18, lines 29-44).

Voit does not explicitly show transmitting from an integrated Digital Subscriber Line Multiplexer (WDSLAM) a signal, said signal including status information of queue utilization levels within said WDSLAM.

However, Suzuki discloses Switched Virtual Connection/Channel SVC Controller 807 of the DSLAM 102 (see Fig. 9) looks up for the unoccupied or idle ATM virtual

connection/channel VC in the VC map and communicates the status of this idle ATM VC in an OEM cell which is to be transmitted to the Con. Manager 902 (Fig. 10) of the Access Server 117 (Figs. 2 and 10) via the ATM switch (see col. 10, lines 48-64, col. 15, lines 60-67, col. 16, lines 1-35 and element 103, Figs. 9 and 10). This shows the hub, a combination of the ATM switch and the Access Server, has direct access to the queue utilization levels (VC utilization level) of the DSLAM.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the communication system of Voit with the teaching of Suzuki such that the ATM switch of Voit has direct access to the VC utilization level of the DSLAM such as the one taught by Suzuki. The motivation to do so is to allow an unused virtual connection to be allocated to the subscriber when a call originating request is issued from the subscriber.

Voit does not explicitly disclose the said hub is a wireless hub nor the said DS3 link is a wireless link.

However, Alspaugh discloses that the link between ATM switch and R-DSLAM is implemented as a wireless link (see Fig. 4 and paragraph 0060). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the ADN ATM switch in Voit such that the link between DSLAM and ADN ATM switch is implemented as a wireless link such as the wireless link between ATM switch and DSLAM taught by Alspaugh. The motivation to do so is to

provide a 44.736 Mbps of high rate transmission of ATM cells over the convenience of a wireless transmission medium.

Regarding claim 20, Voit further discloses the method of claim 19, wherein said step of selectively allocating bandwidth comprises determining queue utilization levels on a per line Digital Subscriber Line (DSL) basis (**each communication rate corresponds to each DSL line and a bandwidth is allocated in response to the rate**, see col. 18, lines 9-44).

Regarding claim 21, Voit further discloses the method of claim 19, wherein said status information comprises bandwidth guarantees for data associated with a user (see col. 18, lines 29-44).

Regarding claim 22, Voit further discloses the method of claim 19, further comprising:

allocating bandwidth (**allocating bandwidth**) in a weighted round robin manner among WDSLAMs in response to determining data in queues awaiting transport to said wireless hub for said WDSLAMs have the same priority level (**Weighted Fair Queuing WFQ**, see col. 19, lines 58-67, col. 20, lines 1-63).

Regarding claim 23, Voit further discloses the method of claim 19, further comprising:

allocating bandwidth in a manner determinative of the WDSLAM having the highest queue priority level (**Priority Queuing PQ**, see col. 19, lines 58-67, col. 20, lines 1-63).

Regarding claim 24, Voit further discloses the method of claim 19, wherein the greatest amount of bandwidth is assigned to the WDSLAM having queues with the highest priority and utilization level (see col. 5, lines 34-45).

Regarding claim 27, the combined system of Voit and Alspaugh discloses the method of claim 19. Alspaugh further discloses said wireless data further comprises a cellular signal (see Fig. 4).

Regarding claim 28, the combined system of Voit and Alspaugh discloses the method of claim 19. Voit also discloses said queue utilization levels further comprises Asynchronous Transfer Mode (ATM) queue utilization levels (**ATM switch queue priority based on rate requirements**, see col. 9, lines 55-67 and col. 10, lines -12).

Regarding claim 29, Voit further discloses the method of claim 19, wherein said queue utilization levels further comprises Internet Protocol (IP) queue utilization levels (**different IP data services require different rates**, see col. 10, lines 1-32).

Regarding claim 30, Voit further discloses the method of claim 19, wherein said wireless hub and WDSLAM have a single feature set (**a feature set of queuing operations**, see col. 9, lines 55-67).

Regarding claim 31, Voit further discloses the method of claim 30, wherein said single feature set comprises an ATM feature set (**ATM cell traffic**, see col. 9, lines 55-67).

Regarding claim 32, Voit further discloses the method of claim 30, wherein said single feature set comprises an Internet Protocol (IP) feature set (**IP traffic**, see col. 10, lines 13-32).

Regarding claim 33, Voit further discloses the method of claim 19, wherein said wireless hub has access to the queue utilization levels on a per line Digital Subscriber Line (DSL) basis (**ADN ATM switch has access to each communication rate of each DSL line and a bandwidth is allocated in response to each rate**, see col. 18, lines 9-44).

Regarding claim 50, Voit discloses an apparatus (**central office**) for communicating wireless information, comprising:

a processor (DSLAM) and an associated storage device (MUX) including instructions for controlling said processor, said instructions, when executed, causing said processor to perform the steps of:

selectively allocating bandwidth to said integrated WDSLAM in response to the queue utilization level of said WDSLAM (**allocating different bandwidths in response different rates required for each service**, see col. 18, lines 29-44).

Voit does not explicitly show transmitting from an integrated Digital Subscriber Line Multiplexer (WDSLAM) a signal, said signal including status information of queue utilization levels within said WDSLAM and receiving said signal, at a hub.

However, Suzuki discloses Switched Virtual Connection/Channel SVC Controller 807 of the DSLAM 102 (see Fig. 9) looks up for the unoccupied or idle ATM virtual connection/channel VC in the VC map and communicates the status of this idle ATM VC in an OEM cell which is to be transmitted to the Con. Manager 902 (Fig. 10) of the Access Server 117 (Figs. 2 and 10) via the ATM switch (see col. 10, lines 48-64, col. 15, lines 60-67, col. 16, lines 1-35 and element 103, Figs. 9 and 10). This shows the hub, a combination of the ATM switch and the Access Server, has direct access to the queue utilization levels (VC utilization level) of the DSLAM.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the communication system of Voit with the teaching of Suzuki such that the ATM switch of Voit has direct access to the VC utilization level of the DSLAM such as the one taught by Suzuki. The motivation to do so is to allow an unused virtual connection to be allocated to the subscriber when a call originating request is issued from the subscriber.

Voit does not explicitly disclose the said hub is a wireless hub nor the said DS3 link is a wireless link.

However, Alspaugh discloses that the link between ATM switch and R-DSLAM is implemented as a wireless link (see Fig. 4 and paragraph 0060). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the ADN ATM switch in Voit such that the link between DSLAM and ADN ATM switch is implemented as a wireless link such as the wireless

link between ATM switch and DSLAM taught by Alspaugh. The motivation to do so is to provide a 44.736 Mbps of high rate transmission of ATM cells over the convenience of a wireless transmission medium.

Regarding claim 51, Voit discloses a method for communicating in a communication system comprising:

receiving data from a modem at an integrated Digital Subscriber Line Multiplexer (WDSLAM) (**receiving rate-shaping at ADN-ATM switch from DSLAM**, see col. 16, lines 1-19);

assigning said data to pre-assigned queues having associated with said queues priority levels (**assigning queues with different priority levels based on the communication rates**, see col. 9, lines 55-67, col. 10, lines 1-12);

determining utilization levels of said queues (**determining different levels of rate shaping**, see col. 9, lines 55-67, col. 10, lines 1-12);

receiving said signal, at a hub (**receiving rate-shaping at ADN-ATM switch**, see col. 16, lines 1-19);

selectively allocating bandwidth to said integrated WDSLAM in response to the queue utilization level of said WDSLAM (**allocating different bandwidths in response different rates required for each service**, see col. 18, lines 29-44).

Voit does not explicitly show transmitting from an integrated Digital Subscriber Line Multiplexer (WDSLAM) a signal, said signal including status information of queue utilization levels within said WDSLAM.

However, Suzuki discloses Switched Virtual Connection/Channel SVC Controller 807 of the DSLAM 102 (see Fig. 9) looks up for the unoccupied or idle ATM virtual connection/channel VC in the VC map and communicates the status of this idle ATM VC in an OEM cell which is to be transmitted to the Con. Manager 902 (Fig. 10) of the Access Server 117 (Figs. 2 and 10) via the ATM switch (see col. 10, lines 48-64, col. 15, lines 60-67, col. 16, lines 1-35 and element 103, Figs. 9 and 10). This shows the hub, a combination of the ATM switch and the Access Server, has direct access to the queue utilization levels (VC utilization level) of the DSLAM.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the communication system of Voit with the teaching of Suzuki such that the ATM switch of Voit has direct access to the VC utilization level of the DSLAM such as the one taught by Suzuki. The motivation to do so is to allow an unused virtual connection to be allocated to the subscriber when a call originating request is issued from the subscriber.

Voit does not explicitly disclose the said hub is a wireless hub nor the said DS3 link is a wireless link.

However, Alspaugh discloses that the link between ATM switch and R-DSLAM is implemented as a wireless link (see Fig. 4 and paragraph 0060). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the ADN ATM switch in Voit such that the link between DSLAM and ADN ATM switch is implemented as a wireless link such as the wireless

link between ATM switch and DSLAM taught by Alspaugh. The motivation to do so is to provide a 44.736 Mbps of high rate transmission of ATM cells over the convenience of a wireless transmission medium.

Voit further discloses communicating data to said DSLAM based on the priority level of the queues (regulates downstream traffic based on the particular grade of service, see col. 5, lines 1-10), except fails to disclose the data is wireless. However, Alspaugh discloses that the link between ATM switch and R-DSLAM is implemented as a wireless link (see Fig. 4 and paragraph 0060). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the ADN ATM switch in Voit such that the link between DSLAM and ADN ATM switch is implemented as a wireless link such as the wireless link between ATM switch and DSLAM taught by Alspaugh. The motivation to do so is to provide a 44.736 Mbps of high rate transmission of ATM cells over the convenience of a wireless transmission medium.

8. Claims 34-36, 38-41, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alspaugh et al. (US Publication 2004/0213189) in view of Suzuki (USP 6,529,479).

Regarding claims 34, 38, Alspaugh discloses an apparatus for communicating in a communications system, said apparatus comprising:

an integrated wireless Digital Subscriber Line Multiplexer (WDSLAM) (**Remote DSLAM**, see Fig. 7) having an interface card (**Master Unit**, see element 51, Fig. 7) for interfacing with a digital landline network (interfacing with customer premises through the trunk

interface, see Figs. 4 and 7) and a wireless network (backhaul wireless ATM network, see paragraph 0055 and Fig. 4), said interface card including:

a channel and conference module (CCM) (**SAR**, see element 32, Fig. 7) converts a digital signal to a wireless signal (**which assemble information into an ATM format for transmission to a wireless ATM network through a backhaul connection**, see Fig. 7);

a service specific interface field programmable gate array (SSI-FPGA) module (**port unit**, see element 35, Fig. 7) coupled to the CCM for providing a timed digital signal to said CCM (**providing Ethernet format signal to SAR**, see Fig. 7); and

Alspaugh does not explicitly show a processor coupled to the SSI-FPGA for monitoring queue utilization levels and transmitting status information of queue utilization levels to a wireless hub.

However, Suzuki discloses Switched Virtual Connection/Channel SVC Controller 807 of the DSLAM 102 (see Fig. 9) looks up for the unoccupied or idle ATM virtual connection/channel VC in the VC map and communicates the status of this idle ATM VC in an OEM cell which is to be transmitted to the Con. Manager 902 (Fig. 10) of the Access Server 117 (Figs. 2 and 10) via the ATM switch (see col. 10, lines 48-64, col. 15, lines 60-67, col. 16, lines 1-35 and element 103, Figs. 9 and 10). This shows the hub, a combination of the ATM switch and the Access Server, has direct access to the queue utilization levels (VC utilization level) of the DSLAM.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the communication system of Alspaugh and Suzuki with the teaching of Suzuki such that the ATM switch of Alspaugh has direct access to the VC utilization

level of the DSLAM such as the one taught by Suzuki. The motivation to do so is to allow an unused virtual connection to be allocated to the subscriber when a call originating request is issued from the subscriber.

Regarding claim 35, the combined system of Alspaugh and Suzuki further discloses the apparatus of claim 34 comprising: Digital Subscriber Line (DSL) drivers (**DSL trunk interfaces**, see Fig. 8) are coupled to said processor for serving as an interface between said interface card and at least one subscriber (**interfacing between DSL subscriber lines in Fig. 8 and the master unit of DSLAM in Fig. 7**).

Regarding claim 36, Alspuagh further discloses the apparatus of claim 35, wherein said digital signal includes an Asynchronous Transport Medium (ATM) signal (**ATM cells in the wireless ATM network**, see Fig. 7).

Regarding claim 39, Alspaugh further discloses the apparatus of claim 35, wherein a backplane (Utopia) couples the CCM and the SSI-FPGA (**that couples SAR and Port Unit**, see Fig. 7).

Regarding claim 40, Alspaugh further discloses the apparatus of claim 39, wherein the backplane includes a Service Specific Interface (SSI) bus (**Utopia buses**, see Fig. 7).

Regarding claim 41, Alspaugh further discloses the apparatus of claim 38, wherein a Utopia-2 bus (Utopia buses) couples (that couples with) said ATM chipset (**ATM switch fabric**), SSI-FPGA (**port unit**), control processor (**processor unit**) and octal line drivers (**DSL trunk interfaces**, see Fig. 7).

Regarding claim 44, the combined system of Alspaugh and Suzuki discloses the apparatus of claim 34. Alspaugh further discloses said wireless data further comprises a cellular signal (see Fig. 4)

9. Claims 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alspaugh et al. (US Publication 2004/0213189) in view of Suzuki (USP 6,529,479), and in further view of Voit.

Regarding claim 45, the combined system of Alspaugh and Suzuki discloses the apparatus of claim 35, except fails to disclose said digital signal includes an Internet Protocol (IP) signal.

However, Voit discloses IP data services that couple to ADN network (see Fig, 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Alspaugh and Suzuki with the further teaching of Suzuki such that the digital signal includes an IP signal. The motivation to do so is to provide high-end vertical IP data services requiring certain QoS levels.

Regarding claims 46, 47, the combined system of Alspaugh and Suzuki discloses the apparatus of claim 45, except fails to disclose said processor includes a communications processor for grouping IP packets based on Quality of Service (QOS) class.

However, Voit discloses providing IP-services through an IP interface (see Fig. 1) based on QoS levels (see col. 14, lines 45-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined system of Alspaugh and Suzuki with the further teaching of Suzuki such that the R-DSLAM of Alspaugh will comprise an IP interface (a communications processor) to provide IP data services based on QoS and to communicate rate information on IP packets to a ATM switch. The motivation to do so is to provide Internet access service of the Internet Service Provider based on the grade level of service subscribed to by the customers.

10. Claims 2-3, 25-26, 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voit et al. (USP 6,829,250) in view of Suzuki (USP 6,529,479) and Alspaugh et al. (US Publication 2004/0213189), and in further view of Scott (US Publication 2005/0135247).

Regarding claim 2, the combined system of Voit, Suzuki, and Alspaugh discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to disclose the communication system of claim l, wherein said wireless data further comprises a Code Division Multiple Access (CDMA) signal.

However, Scott discloses that wireless data are implemented as CDMA signals (see paragraph 0123). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the

ADN ATM switch in Voit with the teaching of Scott in implementing the wireless data as CDMA signals. The motivation to do so is allow wireless data to be communicated between the ATM switch and the DSLAM in accordance with the CDMA communications standard.

Regarding claim 3, the combined system of Voit, Suzuki, and Alspaugh discloses the communication system of claim l, except fails to disclose wherein said wireless data further comprises a Time Division Multiple Access (TDMA) signal.

However, Scott discloses that wireless data are implemented as TDMA signals (see paragraph 0123). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the ADN ATM switch in Voit with the teaching of Scott in implementing the wireless data as TDMA signals. The motivation to do so is allow wireless data to be communicated between the ATM switch and the DSLAM in accordance with the TDMA communications standard.

Regarding claim 25, the combined system of Voit, Suzuki, and Alspaugh discloses all the aspects of the claimed invention set forth in the rejection of claim 19 above, except fails to disclose the method of claim 19, wherein said wireless signal further comprises a Code Division Multiple Access (CDMA) signal.

However, Scott discloses that wireless data are implemented as CDMA signals (see paragraph 0123). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the ADN ATM switch in Voit with the teaching of Scott in implementing the wireless data as

CDMA signals. The motivation to do so is allow wireless data to be communicated between the ATM switch and the DSLAM in accordance with the CDMA communications standard.

Regarding claim 26, the combined system of Voit, Suzuki, and Alspaugh discloses the method of claim 19, except fails to disclose wherein said wireless data further comprises a Time Division Multiple Access (TDMA) signal.

However, Scott discloses that wireless data are implemented as TDMA signals (see paragraph 0123). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the ADN ATM switch in Voit with the teaching of Scott in implementing the wireless data as TDMA signals. The motivation to do so is allow wireless data to be communicated between the ATM switch and the DSLAM in accordance with the TDMA communications standard.

Regarding claim 42, the combined system of Voit, Suzuki, and Alspaugh discloses all the aspects of the claimed invention set forth in the rejection of claim 34 above, except fails to disclose the apparatus of claim 34, wherein said wireless signal further comprises a Code Division Multiple Access (CDMA) signal.

However, Scott discloses that wireless data are implemented as CDMA signals (see paragraph 0123). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the ADN ATM switch in Voit with the teaching of Scott in implementing the wireless data as

CDMA signals. The motivation to do so is allow wireless data to be communicated between the ATM switch and the DSLAM in accordance with the CDMA communications standard.

Regarding claim 43, the combined system of Voit, Suzuki, and Alspaugh discloses the apparatus of claim 34, except fails to disclose wherein said wireless data further comprises a Time Division Multiple Access (TDMA) signal. However, Scott discloses that wireless data are implemented as TDMA signals (see paragraph 0123). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the DS3 link connection between the DSLAM and the ADN ATM switch in Voit with the teaching of Scott in implementing the wireless data as TDMA signals. The motivation to do so is allow wireless data to be communicated between the ATM switch and the DSLAM in accordance with the TDMA communications standard.

11. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Voit et al. (USP 6,829,250) in view of Suzuki (USP 6,529,479) and Alspaugh et al. (US Publication 2004/0213189), and in further view of Lauffenburger et al. (USP 6,657,961).

Regarding claim 37, Alspaugh further discloses the apparatus of claim 36, further comprising:

an ATM chip set (ATM switch fabric, see Fig. 7) for storing ATM information, except fails to disclose it is in accordance with ATM Standards Traffic Management 4.0.

However, Lauffenburger discloses a data flow control system and method that uses ATM 4.0 specification (see col. 4, lines 21-58). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify the combined system of Alspaugh and Voit such that the ATM communication is in conformance with the ATM Standards Traffic Management 4.0. The motivation to do so is to take advantage of the XON/XOFF capability to allow receiving end station to stop or reduce data flow and to restart data flow at a desired rate.

Response to Arguments

12. Applicant's arguments with respect to claims 1, 19, 34 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

13. Claims 48, 49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 48, the apparatus of claim 47, wherein a Utopia-3 bus (Utopia buses) couples said SSI-FPGA (port unit) to said communications processor.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Duong can be reached on 571-272-3164. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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FRANK DUONG
PRIMARY EXAMINER

Kevin Mew
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